Product Brief

Aastra Network Access

CVX 1800 and CVX 600 Multi-Service Access Switches

True carrier-class access

- **Flexible deployment options: CVX 1800 processes 2,688 calls per chassis; CVX 600 processes 612 calls per chassis**
- **Enables high-speed dial, VoIP, FoIP, VPN, tandem, and wholesale services**
- **Delivers universal port capabilities-allowing for a single voice and data network**
- **Interoperates with the CVX SS7 Gateway to reduce costs, time to market, and switch congestion**
- **Industry-leading reliability-fully redundant architecture, 98.5 percent connection success; 100 percent throughput**
- **Telcordia "certified" NEBS Level 3, Earthquake Zone 4 access switch**

To meet the increasing demand for Internet access and Service Providers must be able to scale their network access infrastructure and aggressively compete by offering differentiated services with a quick return on investment. The limitations of existing remote access products have created serious challenges for Service Providers looking to achieve a balance between their investments in infrastructure and the potential revenue gains offered by emerging voice and data services.

AASTRA Network Access

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Aastra Networks CVX Multi-Service Access Switches provide industry-leading density with universal port capabilities to deliver high-performance, dial, VoIP/FoIP, VPN, tandem, and the ability to wholesale any of these services. Operational and real estate cost savings are significant due to the CVX 1800's high port density of 2,688 ports per chassis, and the CVX 600's smaller footprint and lower power consumption; 612 ports per chassis.

A new standard in carrier-class capabilities

The CVX 1800 and CVX 600 Multi-Service Access Switches superior density and scalability resulting in lower operational costs that include:

- Smaller real-estate "footprint"
- Lower power consumption
- Less manpower

With universal port capabilities the CVX 1800 and CVX 600 can dynamically distinguish and handle modem, ISDN, VoIP, or FoIP; thereby providing a single network for voice and data, and further reducing operational costs.

Aastra Network Access CVX Multi-Service Access Switches deliver customer satisfaction by providing industry leading performance and reliability.

Superior density/scalability

- CVX 1800 handles up to 2,688 modem/ISDN connections in a single chassis; four chassis per 7 foot telco rack, supports up to 10,752 connections
- CVX 600 handles up to 612 connections in a single chassis; ten chassis per 7 foot telco rack, supports up to 6,120 connections
- Robust platform offers superior card capacity; 192/204 modems/ISDN per card
- Supports up to 96 E1 or T1 Digital Access Card (DAC) connections
- Supports up to 4 channelized T3 or 2 STM1 (optical) DAC connections
  - more cost-effective than multiple PRI or T1/E1 connections
  - increases density by utilizing fewer slots
  - reduces T1 and E1 cable management costs
- Supports multiple LAN/WAN System Control Card (SCC) interfaces
  - Scales to meet a broad range of performance characteristics, including Ethernet 10/100baseT, 2xOC3c/STM1 ATM, 2xDS-3 Frame Relay, and 52 Mbps HSSI

High-performance design

The CVX Multi-Service Access Switch's Flow-Through architecture incorporates a range of powerful features for superior performance:

- Non-blocking parallel buses transfer data in its native format for faster processing
- ASIC-based Flow-Through switching performs data transfer in a single-hardware cycle, accelerating the transmission of packets from switch to public network or Internet
- Distributed processing and modular design for maximum performance

Deployment flexibility

The CVX Multi-Service Access Switches allow carriers and service providers tremendous flexibility in deploying their network access infrastructure. Large Central Office (CO) deployments looking for scalability are perfect for CVX 1800's 2,688 ports per chassis and ability to deploy 10,752 ports per standard 7 foot telco rack. However, many carriers and service providers have a combination of large POPs and smaller geographically dispersed POPs with limited space and operational power capabilities.

CVX 1800 Multi-Service Access Switch

CVX 600 Multi-Service Access Switch

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The CVX 600's 612 ports per chassis and ability to deploy 6,120 ports per 7 foot telco rack, offer a smaller vertical footprint, density, and lower power requirements, to make it the ideal solution for smaller POPs.

The CVX Multi-Service Access Switches enable carriers and service providers to optimize their network and reduce operational and real estate costs. The flexibility in network deployment enables carriers and service providers to avoid expensive power conversions and maximize their return on investment.

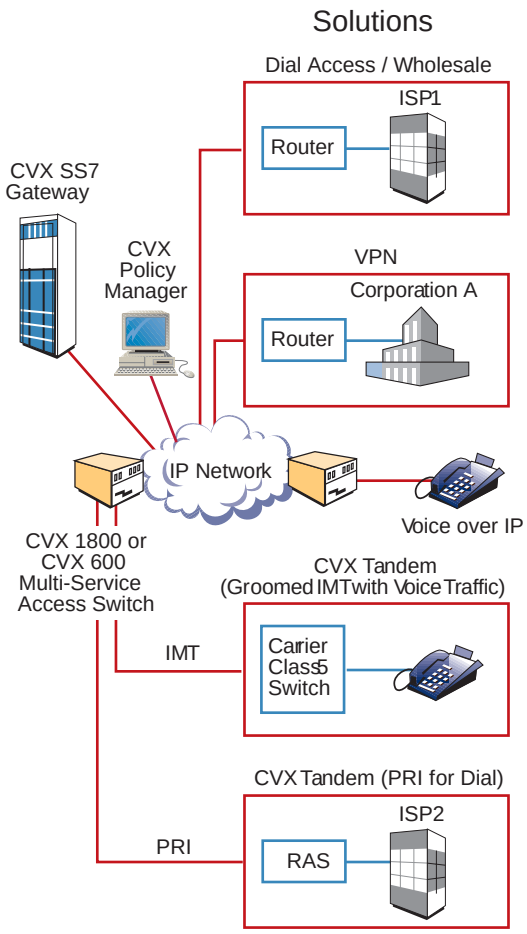
High-performance and reliability

- 100 percent throughput
- The only access switches to offer true CO readiness
  - Telcordia certified to NEBS Level 3, Earthquake Zone 4
- Fully hot-swappable components (including all cards) for ease of upgrades and maintenance
- Redundant architecture (system controller, trunk interfaces, and access cards)
- Multi-processor system with distributed software and hardware enables consistent performance at any level of calling volume
- Up to 168 hot-standby modems per chassis for improved reliability
- Distributed power capabilities feature efficient thermal design that dissipates heat evenly; includes "intelligent" thermal capability
- Point-of-Usage Power Supply (PUPS) allows for increased Mean-Time Before Failures (MTBF)

Quality of Service (QoS)

The CVX 1800 and CVX 600 support a variety of QoS approaches. The QoS strategy for the CVX Multi-Service
Access Switches includes:

CVX 1800 and CVX 600 Multi-Service Access Switch solutions



- Treating packets from IPSec with priority
- Participating in the Differentiated Services (IETF) architecture (DiffServ), by setting the configured/messaged TOS bits in the corresponding dial session IP header
  - Allowing switch/routing decisions to be made on the tagged packet by downstream frame relay or ATM devices

Broad array of service offerings

The CVX Multi-Service Access Switches offer carriers and service providers the delivery of rapid, profitable valueadded IP services such as dial, VoIP, FoIP, VPN, tandem, wireless, and the ability to wholesale any of these services. With up to 2,688 modems per chassis and universal port capabilities, carriers and service providers are now able to take advantage of new revenue streams without the added cost of purchasing, managing, and housing multiple platforms (refer to Aastra Networks CVX Dial Access Solutions brochure.

Ideal for wholesalers

Aastra Network Access CVX 1800 and CVX 600 offer unparalleled scalability, flexibility, performance, and manageability that enable wholesalers to substantially lower their installation, operations, and expansion costs while offering the broadest array of IP services.

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The definitive solution for wholesaling, the CVX Multi-Service Access Switches' Virtual Point-of-Presence (Virtual POP) feature enables wholesalers to partition single or multiple CVX 1800s and CVX 600s into a series of mutually independent access switches, each with its own authentication method, database billing system, and management interface. With the Virtual POP feature, wholesalers can customize their network of CVX 1800s and CVX 600s according to the specific needs of each outsourcing customer.

SS7 interoperability

The CVX 1800 and CVX 600 interoperate with the industry-leading CVX SS7 Gateway to provide cost savings and alleviate switch congestion caused by Internet traffic, thus improving network performance. By interoperating with the CVX SS7 Gateway, carriers and service providers can deploy the CVX 1800 and CVX 600 in an SS7 environment rather than a PRI environment, thereby reducing costs by upwards of 50 percent. The ability to terminate CO Class 5 switch data traffic reduces Internet congestion. New services such as data-only PRI and switch grooming can be added to the carrier's and service provider's offerings.

Flexible management suite

Aastra Network Access offers one of the industry's most flexible management suite for carriers and service providers. CVX network management enables network managers to quickly and efficiently configure, provision, manage, and troubleshoot CVX products across their entire network. In addition, the Preside portfolio provides a serviceware layer of management for the entire Aastra Network Access product offering, as well as the ability to manage other vendor equipment.

Key specifications

Voice Over IP (VoIP)

- Codec Support
  - G.711, G.729a, G.723.1
- Echo cancellation
  - G.168, 128 ms tail
- Voice activity detect
- Silence suppression
- Auto detect voice-band data
- Adaptive Jitter Buffer (up to 400 ms)

Hardware specifications

Dimensions

- CVX 1800
  - 17.5 in. H x 17.3 in. W x 18 in. D
  - 44.5 cm H x 44 cm W x 45.7 cm D
- CVX 600
  - 7.0 in. H x 17.3 in. W x 16.25 in. D
  - 17.8 cm H x 44 cm W x 41.3 cm D

Weight

- CVX 1800
  –100 lbs. [45.5 kg] (2,688 modems and DC power)
- CVX 600
  – 50 lbs. [22.8 kg] (612 modems and DC power)

LAN interface

- Auto-sensing Ethernet 10/100BaseT

PSTN interfaces

- Channelized T3
- Channelized STM1 (optical)
- Channelized T1/E1

Console/craft port

- RS 232, DB-9

IP network interfaces

- Auto-sensing Ethernet 10/100BaseT, 2xOC3c/STM1 ATM, 2xDS-3 Frame Relay, HSSI

Contact alarms

- Audible and visual
- Critical, major, and minor

Software upgrade

- Via flash memory card; Bootp/TFTP downloadable from network

Power requirements

- CVX 1800
  - DC: Nominal -48V, range: -36 to -56V; 1.5 kW maximum
  - Current: 31A at -48V
  - AC: 90 to 240V and 47-63 Hz
- CVX 600
  - DC: Nominal -48V, range: -36 to -56V; .5 kW maximum
  - Current: 20A at -48V
  - AC: 85 to 264V and 47-63 Hz

Environmental

- 32-104° F (0-40° C)
- Humidity 10-85 percent non-condensing
- 4,259 BTUs/HR

Safety certifications

- cUL 950, NTRL/UL 1950, TUV EN 60 950

Telcom approvals

- FCC Part 68, Telcordia GR-1089-CORE, Telcordia GR-63-CORE, JATE
- Telcordia (Bellcore) certified to NEBS Level 3, Earthquake Zone 4

EMI/RF—CVX 1800/CVX 600

- FCC Part 15 Class A/B, EN55022 Class A/B (CISPR), VCCI Class A/B

Software specifications

LAN protocols

- TCP/IP
- Ethernet

WAN protocols

- ATM
- Frame Relay
- HSSI

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VPN support
- L2TP
- L2F
- IPSec/IKE (for operations traffic)

SS7 protocols
- MTP1, MTP2, MTP3
- ANSI ISUP
- ETSI v1 ISUP
- ETSI v2 ISUP
- ETSI TUP

Data forwarding
- IP Routing: Static route, RIP v1, RIP v2, OSPF v2, IGMP multi-cast forwarding, RIP filtering

Access line protocols
- D4, ESF, AMI, B8ZS, B3Z, M13, HDB3, G.704
- PPP (async and sync), IPCP, MLPPP, CCP, HDLC, L2TP, L2F, TCP-Clear
- RBS, PRI, ISUP, R2, NFAS

Modem/ISDN
- V.120, V.90, V.42bis, V.42, V.34bis, V.34, V.33, V.32bis, V.32, V.22bis, V.22, V.21, Bell 103, 212A, V17, K56Flex
  – V.92 and V.44 protocol support
  – V.110 protocol support for wireless applications
  – X.75 protocol support
  – Supports Multichassis Multilink PPP (MMP)

Security
- Customer traffic
  – PAP, CHAP, RADIUS, ACLS, CLID (via CPM)
- Management
  – IPSec/IKE, ACLS, passwords, multiple-levels of authority

Compression
- StacLZS, MPPC supported

Management
- Console terminal, Telnet, SNMP I and II, Web/JAVA, syslog

MIB Support
- Inquire for details

www.aastra.com

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